We claim:

1. A method of creating a powder, comprising

spraying a carrier liquid containing a powder forming ingredient to form a flow of liquid droplets;

entraining the flow with a coolant for sufficient time to freeze the liquid droplets into frozen particles; and

drying the frozen particles to form a dry powder.

2. The method of claim 1 in which the powder forming ingredient is suspended or dissolved in the carrier liquid.

3. The method of claim 1 in which the flow of liquid droplets is entrained within a concurrent flow of coolant.

4. The method of claim 3 in which the concurrent flow of coolant is sprayed from a ring nozzle.

5. The method of claim 1 in which the flow is injected into a chamber and entrained by coolant injected through porous walls of the chamber.

6. The method of claim 1 in which the frozen particles are collected on a filter.

7. The method of claim 6 in which the frozen particles are substantially dried while collected on the filter.

8. The method of claim 1 in which the coolant has a temperature within a first temperature range during freezing of the liquid particles and a temperature warmer than the first temperature range during drying of the frozen particles.

9. The method of claim 1 in which the carrier liquid contains more than one powder forming ingredient.

10. A method of creating a powder within a chamber comprising

providing a flow of liquid droplets containing a powder forming ingredient to form a flow of liquid droplets; and

treating the liquid droplets with a flow of coolant inside the chamber to freeze the liquid droplets prior to deposition and dry the deposited frozen particles, and thus form a powder.

11. The method of claim 10 in which flow of coolant is concurrent with the flow of liquid droplets.

12. The method of claim 10 in which flow of coolant for drying frozen particles is in co-direction with the gravity.

13 The method of claim 10 in which the flow of coolant prevents adherence of liquid droplets to walls of the chamber.

14. The method of claim 10 in which the flow of liquid droplets contains more than one powder forming ingredient.

15. Apparatus for atmospheric spray freeze drying of an ingredient carrying liquid to form a powder, the apparatus comprising:

a chamber having an atomizer at one end of the chamber, the atomizer being connected to a source of the ingredient carrier liquid to produce a flow of liquid droplets;

a nozzle system for providing a flow of coolant that entrains atomized fluid sprayed by the atomizer;

a source of coolant for the nozzle system; and

a collector spaced from the atomizer sufficiently that liquid droplets atomized by the atomizer are frozen by the flow of coolant before contact with the collector.

16. The apparatus of claim 15 in which the nozzle system and atomizer are oriented to provide concurrent flows of coolant and liquid droplets.

17. The apparatus of claim 16 in which the nozzle system comprises a ring nozzle surrounding the atomizer.

18. The apparatus of claim 17 in which the nozzle system is arranged around a porous wall defining a flow chamber through which the flow of liquid droplets passes.

19. The apparatus of claim 15 in which the collector is a filter at an exit from the chamber.

20. The apparatus of claim 19 in which the atomizer and collector are at opposed ends of the chamber.